

Abstract of the Disclosure

Lower electrode contact structures and methods of forming the same provide an interface having a large surface area between a lower electrode and the underlying layers. The lower electrode is in contact with a contact plug and an insulation layer in which the contact plug is buried. At least one supporting layer protrudes upright along the outer peripheral edge of the top surface of the contact plug. The interface between the lower electrode and the underlying layers is thus increased by the supporting layer(s) so that the lower electrode and the underlying layers will solidly adhere to each other.